

a seal connected with said meter cover and operative to prevent removal of said meter cover and indicate tampering with the revenue meter.

REMARKS

Changes to the specification and claims are shown in the attached Appendix A with deletions in brackets and additions underlined.

The Office Action reminds the Applicants to use proper language and format for the abstract of the disclosure. Applicants believe that the originally submitted abstract meets these requirements, thus Applicants have not changed the abstract at this time. Please provide the Applicants with more specifics if it is believed that the present abstract is not proper.

The specification was objected to because the specification made reference to a U.S. patent application without including the serial number and filing date, which were unknown at the time of filing. The specification has been revised to include the serial numbers and filing dates that are now known.

The Office Action notes that the application appears to claim subject matter disclosed in a prior copending application, and thus requests that reference to the prior application be made in the first sentence of the specification of this application. This application claims no priority to an earlier filed copending application, thus it is respectfully submitted that the first sentence need not be amended.

The Office action states that the microfiches are missing that are listed on page 2 of the specification. Applicants herewith resubmit the listed microfiches. The top of the microfiches refer to attorney docket number 6270/22. These microfiches are identical to the microfiches originally submitted with the present application.

The Office Action requests that the specification on page 10 be amended to include missing serial number and filing date information. The specification on page 10, lines 26-27 has been changed to reference the missing application serial number and filing date, which were unknown at the time of filing the present application.

The Office Action warns that with regard to the ANSI references listed on pages 6 and 7 and 8 of the specification that the listing does not constitute a proper information disclosure statement. Applicants note that the ANSI references listed on pages 7 and 8

of the specification were disclosed in the information disclosure statement filed on October 21 and 22, 1999 as referenced A96-A100. The references were considered by Examiner Jolly on February 1, 2001.

Figures 1-3 were objected to as not containing the Prior Art legend. The figures are correct as they stand, however, to not include a Prior Art legend. Figures 1-3 do include aspects of the claimed invention, such as the keypad (element 32) and the graphic user interface (element 28). Applicants have changed the brief description of figures 1-3 to more accurately describe the figures. Applicants respectfully request that this amended description be entered.

Claim 1-21 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite. The phrase "a variable context" was objected to. Claim 1 has been changed to remove the term "variable context." Moreover, the term "a context adaptable input device" was objected to as being indefinite in being unclear as to what a context adaptable input device means with regard to the revenue meter. Claim 1 has been changed to more clearly define how the context adaptable input device relates to the revenue meter. Claims 2-21 depend, directly or indirectly, from claim 1. Thus, applicants respectfully request that the 35 U.S.C. §112 rejection of claims 1-21 be withdrawn.

Claims 1, 2 and 10-12 stand rejected under 35 U.S.C. §102(e) as being anticipated by Lerner (U.S. Patent No 6,049,791). Applicants respectfully traverse this rejection because Lerner fails to disclose or suggest a revenue meter with a cover, a graphic user interface and an input device located with the revenue meter.

Lerner purports to disclose a system for reading and displaying utility usage information. The system includes a utility meter remotely connected to a separate display device. The separate display device includes a display 22, a keypad 50, a printer 30 and a microprocessor. (See fig. 3 and 4 and the Spec. Col. 3, lines 41-45). The system (fig.1 element 10; Spec. Col. 3, lines 40-41) includes a water meter 12 an electric meter 14, a gas meter 16, the display 22 separate from the meters and a separate telephone 18. To accommodate the remote viewing of meter information, the meters (see fig. 3) connect to an encasement 20 of the display device via cable 42 located within a conduit 40. (Spec. Col. 3 lines 55-60). The microprocessor located

within the enclosure 20 operates to receive consumption data from the meters 12 14 16 (Col. 3 lines 55-60). The keypad 50 and a display 22 are located with the remote encasement 20. The keypad 50 allows "manual control of the display corresponding to the plurality of utility indica 24" (Col. 4 lines 18-20). The utility indica (fig 5 element 24) refers to the identity of the attached utilities to be displayed on the display (Col. 4 lines 17-18).

Thus, Lerner purports to disclose an enclosure containing a microprocessor whereby consumption information from the remote water meter 12, electric meter 14, gas meter 16 and telephone 18 are constantly measured by the microprocessor. A user may press a display switch 26 (fig. 5) to display the current billing information (Spec. Col. 4 lines 34-39). Lerner does not disclose, nor contemplate, an input device and graphic user interface located with the meter.

Conversely, the present invention claims a revenue meter that includes a graphic user interface and an input device located with the revenue meter. The present invention claims a "a meter cover operative to enclose the revenue meter and said graphic user interface." The present invention allows for commands to be directly input into the revenue meter via the claimed "input device located on said meter cover." The input device, such as keypad 32, presents information, such as status of the input, or messages to the microprocessor, microcontroller or any other central control device via the graphic user interface, or display. The microprocessor in turn performs actions depending on the type of input and the current operating mode of the revenue meter. (Specification p.10 lines 21-25). The display may be programmed using the keypad (Spec. p. 11 lines 10-12) giving users only the specific information they require at the site of the revenue meter.

Since Lerner does not disclose or suggest the claimed "meter cover operative to enclose the revenue meter and said graphic user interface" and/or the input device "located on the meter cover," applicants respectfully submit that the rejection of claims 1, 2 and 10-12 over Lerner be withdrawn.

In addition, regarding claim 11 and 12, Lerner does not disclose or suggest a the claimed web portion on the keypad. Figure 2 and Col. 4 lines 10-12 disclose a keypad but no mention of construction or material type is given or implied in the specification or

shown in the figures. For this further reason, Applicants respectfully request that the rejection of claims 11 and 12 be withdrawn.

Claims 3-9 stand rejected under 35 U.S.C § 103(a) as being unpatentable over Lerner. Applicants respectfully traverse this rejection. Claims 3-9 depend from claim 1 and thus include all of the features of claim 1 and additional features. For the reasons stated above with regard to claim 1, Applicants respectfully request that the rejection of claims 3-9 be withdrawn.

Claims 13-19 stand rejected under 35 U.S.C § 103(a) as being unpatentable over Lerner in view of Obear (US 5,021,763). Regarding claims 13 and 14, Applicants respectfully traverse this rejection because neither Lerner nor Obear, nor the combination thereof, disclose or suggest a compression plate to provide a watertight seal on the keypad. Regarding claims 15 and 16, Applicants respectfully traverse this rejection because neither Lerner nor Obear, nor the combination thereof, disclose or suggest the claimed "revenue meter [that] is programmed to scroll through a series of preset displays." Applicants also traverse the rejection of claims 17-19, as discussed below.

Claims 13-19 depend from claim 1, and thus include all of the features, including additional features, of claim 1. For the reasons discussed above with regard to claim 1, Applicants respectfully request that the rejection to claims 13-19 be withdrawn.

The rejection of claims 13-16 should also be withdrawn for the following additional reasons. Obear purports to disclose a computer constructed for extreme environmental conditions. The Office action states Obear discloses a compression plate (fig 9, elements 108 110) which compress a keypad to the meter cover. On the contrary, Obear merely purports to disclose a compression plate (fig 9, elements 108 110) for use in sealing a flexible cable (fig 9, element 94) within a box (element 24), the flexible cable extending from the box (Col. 8 lines 4-8). Obear requires a minimum of at least two separate wafers (fig 9, element 98; Col. 9 lines 17-25) to achieve the seal. The Office Action suggests the watertight seal (Col. 10 line 15) is related to the keypad, however, Obear merely purports to disclose a watertight seal (Col. 10 line 15) for use in sealing an access port to a disk drive (Col. 10 line 1-2) by use of a twist-to-seal closure (Col. 10 line 14). Obear discloses sealing a keypad (fig 5 element 14) with a gasket (fig

5 element 16) and a bezel (fig 5 element 18) (Col. 5 lines 14-16), not with a compression plate.

Conversely claims 13 and 14 of the present invention claim “a compression plate operative to compress said keypad to said meter cover, to provide the water tight seal.” For this additional reason, Applicants respectfully request that the rejection of claims 13 and 14 be withdrawn.

Lerner purports to disclose a separate enclosure containing a microprocessor whereby consumption information from the external water meter 12, electric meter 14, gas meter 16 and telephone 18 are constantly measured by the microprocessor. A user may scroll through a series of preset displays of the display device (Col. 4 lines 37-39), not a series of preset displays of the attached metering devices (elements 12 14 16). Furthermore, it is the display device which is programmed, not the attached metering devices (elements 12 14 16).

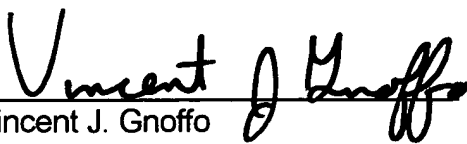
Lerner does not disclose or suggest the claimed scrolling of preset displays of the revenue meter and programming of the revenue meter. For this additional reason, Applicants respectfully request that the rejection of claims 15 and 16 be withdrawn.

In addition, regarding claim 18, Lerner discloses a device with a keypad separate from the electric meter, not the claimed “meter cover includ[ing] alignment means for aligning said context adaptable input device to said intermediate actuators”. For this additional reason, Applicants respectfully request that the rejection of claim 18 be withdrawn.

Claims 20-22 stand rejected under 35 U.S.C § 103(a) as being unpatentable over Lerner in view of Power Measurement Limited. Dependent claims 20-22 include all of the features of claim 1, including additional features. Thus, Applicants respectfully request that the rejection of claims 20-22 also be withdrawn for the reasons discussed above with regard to claim 1.

For all of the above reasons, Applicants respectfully request reconsideration and allowance of the present application. The Examiner is invited to contact the undersigned attorney at the below-listed number if there are any outstanding issues that could be resolved through a telephone conference.

Respectfully submitted,



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Appendix A

In the Specification:

Please change the paragraphs on page 1, lines 3-28 as follows:

The following co-pending and commonly assigned U.S. patent applications have been filed on the same date as the present application. All of these applications relate to and further describe other aspects of the embodiments disclosed in the present application and are all herein incorporated by reference.

[U.S. Pat. Application Ser. No. _____] U.S. Pat. Application Ser. No. 09/370,317, "REVENUE METER WITH POWER QUALITY FEATURES", (Attorney Ref. No. 06270/22), [filed _____] filed August 9, 1999.

[U.S. Pat. Application Ser. No. _____] U.S. Pat. Application Ser. No. 09/371,883, "A-BASE REVENUE METER WITH POWER QUALITY FEATURES", (Attorney Ref. No. 06270/32), [filed _____] filed August 9, 1999.

[U.S. Pat. Application Ser. No. _____] U.S. Pat. Application Ser. No. 09/370,695, "REVENUE METER WITH GRAPHIC USER INTERFACE", (Attorney Ref. No. 06270/23), [filed _____] filed August 9, 1999.

[U.S. Pat. Application Ser. No. _____] U.S. Pat. Application Ser. No. 09/370,686, "REVENUE METER BLADE ASSEMBLY AND METHOD OF ATTACHMENT", (Attorney Ref. No. 06270/25), [filed _____] filed August 9, 1999, and issued as U.S. Patent No. 6,186,842 on February 13, 2001.

[U.S. Pat. Application Ser. No. _____] [U.S. Pat. Application Ser. No. _____] U.S. Pat. Application Ser. No. 09/370,863, "A POWER SYSTEM TIME SYNCHRONIZATION DEVICE AND METHOD FOR SEQUENCE OF EVENT RECORDING", (Attorney Ref. No. 06270/24), [filed _____] filed August 9, 1999.

[U.S. Pat. Application Ser. No. _____] U.S. Pat. Application Ser. No. 09/369,870, "METHOD AND APPARATUS FOR AUTOMATICALLY CONTROLLED GAIN SWITCHING OF POWER MONITORS", (Attorney Ref. No. 06270/27), [filed _____] filed August 9, 1999.

[U.S. Pat. Application Ser. No. _____] U.S. Pat. Application Ser. No. 09/370,696, "EXTERNAL I/O AND COMMUNICATIONS INTERFACE FOR A

REVENUE METER", (Attorney Ref. No. 06270/26), [filed _____] filed August 9, 1999.

Please change the paragraph on page 3, line 3 to line 8 as follows:

To provide user input to the revenue meter, known meters typically utilize cumbersome keys or buttons located within a sealed cover of the revenue meter, or keys which are accessible [form] from the outside but are sealed and cannot be activated without removing the seal. In both cases, at least one security seal is installed to prevent or indicate unauthorized access. Thus, the seal must be replaced [very] every time the meter is accessed.

Please change the paragraph on page 5, line 1 to line 9 as follows:

Thus, there is a need for an improved revenue meter that provides easily accessible and easy to use interfaces. This includes both a front panel, as well as I/O and communications connections. In addition, there is a need for an improved revenue meter with an I/O and communications interface that is located separate from the revenue meter. In addition, there is a need for an [extern al] external I/O device that is easy for the user to configure, hence reducing installation time. Moreover, there is a need for an I/O and communications interface that is expandable and not limited to the number of conductors leaving the revenue meter.

Please change the paragraph on page 5, line 28 to line 31 as follows:

Figure 1 depicts a perspective view of an exemplary S-Base revenue meter, and meter cover, which [connects to] includes the interfaces of the present invention;

Please change the paragraphs on page 6 line 1 to line 6 as follows:

Figure 2 depicts a perspective view of an exemplary A-Base revenue meter, and meter cover, which [connects to] includes the interfaces of the present invention;

Figure 3 depicts a perspective view of an exemplary Switchboard revenue meter, and meter cover, which [connects to] includes the interfaces of the present invention;

Please change the paragraph on page 10, line 5 to line 14 as follows:

Referring to FIGS. 1-3, the S-base and A-base revenue meters' cover 24, and the Switchboard revenue meter's cover 48, are at least partially transparent. The transparency permits viewing of the meter's display 28 including a graphic user interface (GUI)(not shown) without having to remove the cover 24. As mentioned above, the meter cover 24 provides the context adaptable input device such as the keypad 32 for interacting with the revenue meter while the meter cover 24, 48 remains in place. Artisans will appreciate that the keypad 32 can be replaced with other context adaptable input devices, such as a touch screen, a mouse, a track ball, a light pen, a membrane switch, or other similar [device] devices.

Please change the paragraph on page 10, line 23 to line 30 as follows:

The keypad 32 presents information (i.e., the state of the input hardware such as buttons) or messages to a microprocessor, microcontroller or other central control device via the GUI, which in turn performs actions depending on the type of input and the current operating mode of the revenue meter 20, 34, 42. The GUI and a description of the operating modes is discussed in commonly owned [U.S. Pat. Application Ser. No. _____, "REVENUE METER WITH GRAPHIC USER INTERFACE", filed _____, which is incorporated by reference herein] U.S. Pat. Application Ser. No. 09/370,695, "REVENUE METER WITH GRAPHIC USER INTERFACE" which was incorporated by reference above.

Please change the paragraph on page 12, line 23 to line 31 as follows:

Referring to FIGS. 4B and 5A-5C, to provide a watertight interface between the keypad 32 and the cover 24, a backside of the top portion 33 of the cover 24 includes sealing walls 58. Infrared light pipes 59 are also included on the backside of the top portion 33 of the cover 24. As described, the keypad 32 of the revenue meter 20, 34, 42 utilizes an elastomer keypad. The sealing walls 58 [sealing] sealingly engage the elastomer keypad 32. The keypad 32 includes at least one button, e.g., scroll buttons 52, with a plunger 64, and a web 66 portion which allows the plunger to move in a direction generally perpendicular to the keypad 32.

Please change the paragraph on page 13, line 17 to line 26 as follows:

Referring to FIGS. 6A and 6B, to mechanically connect the keypad 32 to the revenue meter 26, intermediate actuators 72 transfer the keypad's motion to micro switches 74 mounted on a printed circuit board 76. Referring also to FIGS. 7A-7D, according to a preferred embodiment, the intermediate actuators 72 are contained within bezel 78. The intermediate actuators 72 include intermediate key actuators 72a, an intermediate reset demand actuator 72b, and an intermediate test mode actuator 72c which is accessible only when the cover 24 is removed. Thus, unlike known demand reset keys which [includes] include multiple parts, including a spring, fasteners and lever arms, the bezel 78 of the present invention allows for a one piece demand reset key.

Please change the paragraph on page 16, line 24 to line 31 as follows:

The first external I/O and communications device 88 is the master on the bus, and thus initiates all data transfers. In a preferred embodiment, the interface is [a] full-duplex, therefore data flows in both directions at once. The I/O and communications device 88 reports its input states while the revenue meter 20 transmits output states. Preferably, all data packets are error checked using a cyclic redundancy check. If a transmission error is detected, no retry is attempted, the packet is ignored and the states are updated on the next transaction.

Please change the paragraph on page 19, line 12 to line 13 as follows:

Type X – 16 bits indicating the type of input or output of a [particulr] particular port on the I/O and communications device 88. For example:

Please change the paragraph on page 21, line 12 to line 26 as follows:

It is necessary to timestamp the transition time of an input on the external I/O device 88 based on the time in the revenue meter 20, 34, 42 since the microprocessors in the revenue meter and external I/O and communications device are not time synchronized[.]. The external I/O and communications device 88 preferably scans inputs every 819.2 microseconds. When the I/O and communications device 88 sees a

transition on an input, it stores the free running counter in the input packet. This free running counter ideally increments every 3.2 microseconds. When the external I/O device is transmitting the input packet to the meter, just before transmitting the last four bytes of the packet, for example, it inserts the current free running counter into the 3rd and 4th last bytes. This ensures that the free running counter value inserted into the packet is as close as possible to the value it would be at the end of packet transmission. When the revenue meter 20, 34, 42 receives the packet, it calculates the time of transition of any of the inputs with the following formula:

In the claims:

Please change claim 1, 13, 14, 21 and 22 as follows:

(Amended) 1. A revenue meter for measuring the delivery of electrical energy from an energy supplier to a consumer through an electric circuit, the revenue meter comprising:

a graphic user interface connected with the revenue meter[, said graphic user interface providing a variable context];

a meter cover operative to enclose the revenue meter and said graphic user interface; and

a context adaptable input device located on said meter cover and connected with the revenue meter, said [variable function] context adaptable input device being operative to interact with said variable context graphic user interface without removing said meter cover.

(Amended) 13. The revenue meter according to claim 2, further including a compression plate operative to compress said keypad to said meter cover, to provide [the] a water tight seal.

(Amended) 14. The revenue meter according to claim 13, wherein said compression plate includes a locating portion operative to align said keypad to at least

one[said] intermediate actuator, said immediate actuator operative to mechanically connect said keypad with said graphic user interface of the revenue meter.

(Amended) 21. The revenue meter according to claim 1, further comprising:
[a display;]
terminals disposed on a bottom side of the revenue meter for coupling the revenue meter with the electric circuit;
a terminal cover for covering said terminals; and
a first seal connected with said meter cover and operative to prevent removal of said meter cover.

(Amended) 22. The revenue meter according to claim 1, further comprising:
a draw-out chassis coupled with the revenue meter and operative to fit within a switchboard enclosure;
terminals disposed on said chassis for engaging matching terminals within said enclosure;
[a display;] and
a seal connected with said meter cover and operative to prevent removal of said meter cover and indicate tampering with the revenue meter.

Please add new claims 23-31 as follows:

(New) 23. A revenue meter for measuring the delivery of electrical energy from an energy supplier to a consumer through an electric circuit, the revenue meter comprising:

a graphic user interface connected with the revenue meter, said graphic user interface operative to display graphical objects;

a meter cover operative to enclose the revenue meter and said graphic user interface;

a keypad located on said meter cover and connected with the revenue meter, said keypad being operative to interact with said graphic user interface without removing said meter cover.

(New) 24. The revenue meter according to claim 23, wherein said keypad further includes a web portion which allows a plunger of said keypad to move in a direction generally perpendicular to said keypad.

(New) 25. The revenue meter according to claim 23, further including intermediate actuators to mechanically connect said keypad with said graphic user interface of the revenue meter.

(New) 26. The revenue meter according to claim 24 wherein the keypad is elastic.

(New) 27. The revenue meter according to claim 25, further including a compression plate, said compression plate including a locating portion operative to align said keypad to said intermediate actuators.

(New) 28. The revenue meter according to claim 23, further including a compression plate operative to compress said keypad to said meter cover and further operative to provide a water tight seal.

(New) 29. The revenue meter according to claim 23, further comprising:
bayonet terminals disposed on the revenue meter mateable with matching jaws of a detachable meter mounting device; and
a seal connected between the revenue meter and said detachable meter mounting device, said seal operative to prevent removal of the revenue meter and indicate tampering with the revenue meter.

(New) 30. The revenue meter according to claim 23, further comprising:
terminals disposed on a bottom side of the revenue meter for coupling the revenue meter with the electric circuit;
a terminal cover for covering said terminals; and
a first seal connected with said meter cover and operative to prevent removal of said meter cover.

(New) 31. The revenue meter according to claim 23, further comprising:

a draw-out chassis coupled with the revenue meter and operative to fit within a switchboard enclosure;

terminals disposed on said chassis for engaging matching terminals within said enclosure; and

a seal connected with said meter cover and operative to prevent removal of said meter cover and indicate tampering with the revenue meter.